

Individuals Who Experience Autonomous Sensory Meridian Response Have Higher Levels of Sensory Suggestibility

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Abstract

Autonomous sensory meridian response (ASMR) is a self-reported sensory phenomenon that elicits a pleasurable tingling sensation that often starts in the head. This study showed that participants who experience ASMR ($N = 35$) are also more prone to experience illusory sensory events than controls ($N = 25$), as measured with the Sensory Suggestibility Scale. This suggests that ASMR is not only associated with cognitive traits such as imagery ability but also to how individuals *physically* experience sensory events.

Keywords

ASMR, sensory suggestibility, sensory processing

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Autonomous sensory meridian response (ASMR) is a self-reported sensory phenomenon that elicits a pleasurable tingling sensation that starts in the head and moves downwards toward the spine (Barratt & Davis, 2015; Barratt, Spence, & Davis, 2017). Tingles occur most often in response to visual and auditory stimuli. These *triggers* are highly

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individualized and include watching and hearing someone softly whispering, tapping on various surfaces, personal attention, or crunchy sounds (Barratt & Davis, 2015; Barratt et al., 2017). Due to the almost euphoric feeling that the tingles elicit in the body, the ASMR phenomenon has also been dubbed as *brain orgasm*. Notably, there seems to be anecdotal evidence that ASMR helps relieve insomnia, depression, and feelings of anxiety (Barratt & Davis, 2015; Garro, 2017). Surprisingly, despite the significant and impressive online following, there are limited published scientific studies investigating ASMR as a scientific construct.

Previous work showed that certain personality traits are positively associated with ASMR, such as the *openness to experiences* scale from the Big Five Personality Inventory (BFI; Fredborg, Clark, & Smith, 2017; McErlean & Banissy, 2017) and the Fantasy subscale of the Inter-personal Reactivity Index (IRI; McErlean & Banissy, 2017). These previous studies focused mainly on the link between ASMR and certain cognitive constructs; however, Poerio, Blakey, Hostler, and Veltri (2018) showed that ASMR is not only a cognitive affective experience, but it also elicits a physical sensory experience. Therefore, the aim of this study was to investigate a possible link between ASMR and the proneness to experience illusory *sensory* events.

Sensory suggestibility is often described as a personality trait related to how an individual responds to sensory information that is covertly being influenced by someone else (Gheorghiu, Koch, & Hubner, 1995; Marotta, Tinazzi, Cavedini, Zampini, & Fiorio, 2016; Stone, Bullock, Keizer, & Dijkerman, 2018). We assessed this with the Sensory Suggestibility Scale (SSS; Gheorghiu et al., 1995). During the SSS, the experimenter verbally hints that the participant should feel a particular sensation. For example, during one of the experimental exercises, participants place an LED flashlight to their face and report on a 5-point Likert-type scale if they felt any sensation of warmth on their cheek. Despite the fact that it is physiologically impossible to perceive the suggested sensation in the experimental exercises, highly suggestible individuals will report otherwise. The SSS includes control exercises as well, which evoke genuine sensory events. For example, participants cover their ear with their cupped hand and report if they heard a noise equivalent to holding a seashell to one's ear. We omitted two control exercises due to time constraints (SSS Items 3 and 9).

We expected participants who experience ASMR ($N=36$, 26 females) to score higher on the SSS compared to the non-ASMR group ($N=25$, 20 females), implying a link between levels of suggestibility to sensory information and the tendency to report ASMR experiences.

The SSS scores were not normally distributed, $W(71)=.946$, $p=.004$. For the SSS_{experimental} score, a Mann–Whitney U test revealed a significant difference between the ASMR ($Mdn=13.00$, interquartile range [IQR]=7.00) and non-ASMR group ($Mdn=9.00$, $IQR=7.00$), $U=261$, $z=-2.65$, $p=.008$, $d=0.64$. For SSS_{control} score, no differences were found between the ASMR ($Mdn=3.00$, $IQR=2.00$) and non-ASMR group ($Mdn=3.00$, $IQR=2.00$), $U=391$, $z=-.71$, $p=.481$. These findings imply higher levels of sensory suggestibility in the ASMR group.

A Wilcoxon signed-rank test showed no difference between mean SSS_{experimental} ($Mdn=1.40$, $IQR=0.70$) and mean SSS_{control} ($Mdn=1.50$, $IQR=1.00$) scores in the ASMR group ($z=-.83$, $p=.406$, $d=0.17$). However, in the control group, the mean SSS_{control} score ($Mdn=1.50$, $IQR=1.00$) was significantly higher than the mean SSS_{experimental} ($Mdn=0.90$, $IQR=0.70$) score ($z=-2.27$, $p=.024$, $d=0.56$). These results imply that participants in the ASMR group did not differentiate between illusory and genuine sensory experiences in terms of intensity. This further strengthens our conclusion that

individuals who have ASMR experiences are more susceptible to experiencing illusory sensory events.

Interestingly, previous work, unrelated to ASMR, showed that elevated SSS scores are associated with experiencing illusory sensations during several bodily illusions (Marotta et al., 2016; Stone et al., 2018). It would be interesting to investigate whether individuals who experience ASMR show a greater susceptibility to bodily illusions than controls. This would enable us to examine whether individuals with ASMR experiences have a different representation of *the self* in their brain, as bodily illusions are frequently used as tools for addressing constructs such as self-awareness, interoception, and plasticity of body representation (see Blanke, 2012). ASMR is a very private and internally focused experience, in which the individual is involuntarily drawn to a distinct internal sensory event. As such, it is plausible that certain interoceptive skills are prerequisite to being able to have ASMR experiences. Recently, Smith, Fredborg, and Kornelsen (2019) showed altered connectivity in several neural networks in individuals with ASMR experiences, among which the sensorimotor network.

Previous work also started to establish a personality profile indicating that individuals who experience ASMR report higher levels of certain cognitive constructs (e.g., openness to experiences, fantasizing; Fredborg et al., 2017; McErlean & Banissy, 2017). Our results indicate that establishing a profile based on constructs that involve sensory *bodily* experiences will deepen our understanding of the nature and extent of ASMR further. This is crucial as considerable claims are made regarding ASMR and its beneficial effects on mental health. Anecdotal evidence for example indicates that individuals are using ASMR as a therapeutic tool to relieve a wide array of mental illnesses, such as insomnia, depression, and feelings of anxiety (Barratt & Davis, 2015; Garro, 2017). Our findings serve as a stepping stone to help advance research focusing on sensory bodily experiences that might characterize ASMR, a unique sensory phenomenon that seemingly brings great relief and comfort to individuals.

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